CANADIAN JOURNAL OF PLANT SCIENCE AUTHOR INDEX, VOLUME 60, 1980

Addison, B. M., 795 Ahmed, A.M., 713 Ahmed, S. U., 285 Alex, J. F., 635 Ali-Khan, S. T., 297 Allen, H. T., 283 Anderson, G. W., 1005 Anderson, I. C., 1427 Antoun, H., 209 Asay, K. H., 1171 Atkinson, R. G., 747 Bailey, T. B., 379 Baker, R. J., 325 Baliko, W., 149, 453

Banko, W., 149, 953 Bandeen, J. D., 1419 Barnett, G. M., 1147 Bassett, I. J., 1269 Bastien, D., 723 Bell, W. C., 69 Berdahl, J. D., 371 Bergeron, E., 695 Berkenkamp, B., 1039

Best, K. F., 651 Betts, M. F., 1115 Beversdorf, W. D., 399 Bible, B. B., 1295 Bishop, B. H., 879, 883

Black, L., 751 Bockholt, A. J., 473 Bolduc, R., 1303 Bordeleau, L. M., 209

Bouchard, M., 577 Bouw, W. J., 167 Bowes, G. G., 651

Brach, E. J., 69, 411 Bradbury, I. K., 1393 Briggs, K. G., 1455

Brown, G. L., 1383 Bullen, M. R., 771 Bushuk, W., 737

Campbell, C. A., 785, 1063 Carter, M. R., 903 Cavers, P. B., 953, 1269 Ceccarelli, S., 221, 491, 501, 687 Cesna, A. J., 1283

Charlton, J. L., 795 Childers, W. R., 1041 Chinn, S. H. E., 1467 Chong, C., 895, 1295 Choo, T. M., 31, 41 Christie, B. R., 479, 485, 533, 547

Clarke, J. M., 1035 Clark, K. W., 121, 385 Clements, S. J., 1203

Cole, D. F., 1489 Collins, M. J., 605 Comeau, J. E., 591, 1147

Cook, F. D., 509 Crofts, H. J., 1135 Crompton, C. W., 1269 Crowley, J., 613

Crowle, W. L., 1071 Currie, P. O., 1411

Cutcliffe, J. A., 571, 599

Damiani, F., 491, 501 Darwent, A. L., 929 Daubney, H. A., 743 Daun, J. K., 799 Dean, J. R., 121, 385 Dedio, W., 291 Delort-laval, J., 695

Denis, J. C., 233 Deschenes, J. M., 61 Desjardins, R. L., 895 Dew, D. A., 1263

Dexter, J. E., 25, 49, 427 Dickson, W. D., 1041 Dirks, V. A., 759

Dorrell, D. G., 799 Doughty, C. C., 255 Downey, R. K., 1031 Drew, B. N., 1283

Dubuc, J. P., 273 Duncan, R. R., 473, 1129 Dyck, F. B., 1477

Eaton, G. W., 873 Eggens, J. L., 665, 1209 Elliott, J. M., 679

Enerson, P. M., 1123, 1459, 1463

Evans, D. W., 859 Evans, L. E., 1135 Evert, D. R., 303 Fahselt, D., 669 Fairey, N. A., 539, 1367 Falcinelli, M., 491, 501 Farnworth, E. R., 727 Fedak, G., 277 Fejer, S. O., 277

Ferrari, F., 1101 Flotre, D. M., 13 Forsyth, F. R., 299
Foster, A. C., 763
Foster, K. W., 1
Francis, T. R., 1045
Franko, G. D., 965, 981
Freyman, S., 463
Frey, K. J., 379
Friesen, G. H., 759
Fritz, W., 795
Fulkerson, R. S., 801, 841

Fulton, J. M., 197

Funnell, H. S., 149

Gaborit, T., 695 Gauthier, F. M., 723 Gavrechenkov, Y. D., 1087 Gillespie, T. J., 213 Girardin, P., 1451 Glick, H., 69 Grant, M. N., 1309 Green, N. A., 795

Gross, R. S., 621, 1393 Grover, R., 185 Gubbels, G. H., 721 Guibord, M. O'C., 265

Gupta, U. C., 113, 571 Gutman, J., 755

Hall, J. W., 1235 Hamill, A. S., 947, 1045 Hanna, M. R., 1481 Hardin, R. T., 509 Harney, P. M., 665 Hart, R. H., 1157 Harvey, B. L., 241, 371, 733

Hatley, O. E., 679 Hawthorn, W. R., 621 Hayden, B. J., 311

Heikal, M. M., 713 Hobbs, E. H., 91, 445 Hofstra, G., 1023

Holl, F. B., 1109 Holt, N. W., 767, 1283, 1327

Holt, N. W., 767, 1283, 1 Horak, A., 1455 Hornby, C. A., 163, 1289 Ho, K. M., 79, 279 Hsiao, A. I., 643 Hsu, F. H., 1059 Hume, D. J., 399, 1315 Hunter, J. H., 177

Hunter, N. R., 795 Hunter, R. B., 1123, 1459, 1463

Irvine, R. B., 241, 733 Ismail, A. A., 891 Ivany, J. A., 917, 1049 Iverson, M. K., 303

Jika, N. I., 233 Johnson, D. A., 1171 Johnson, P., W., 203 Johnston, A., 1473 Jones, G. E., 279 Ju, H-Y., 1295

Kalnin, C., 131 Kaufman, M. L., 283 Keller, E. R., 821 Kenkel, N. C., 891 Kennedy, I. R., 509 Kidd, G. E., 213 Kilcher, M. R., 1191 Klinck, H. R., 31, 41 Knowles, R. P., 1163 Korven, H. C., 185, 1179 Kosmolak, F. G., 25, 427, 1071, 1333 Kotecha, A., 813 Krakar, P. J., 479, 485 Krogman, K. K., 91, 445 Kruger, J. E., 433 Kunelius, H. T., 113, 519

LaBerge, D. E., 1343 Lachance, R. A., 209 Lacroix, L. J., 69, 433 Ladouceur, G., 1077 Lamb, R. J., 1439 Lamotte, C. E., 1427 Larson, R. I., 1333 Lawrence, T., 249, 1179, 1477 Lawson, N. C., 227 Leisle, D., 25, 427 Leyshon, A. J., 785, 1063 Lidster, P. D., 299, 555, 865 Lightfott, H. J., 299 Liptay, H. J., 911 Liu, H. J., 453 Li, T. S-C., 163, 1289 Loiselle, R., 277

Kuo, C. G., 1059

MacDonald, M. D., 445
Mack. A. R., 411
MacNeill, J., 1243
MacPhail, J. M., 665
MacPherson, E. A., 1203
Majak, W., 1235
Major, D. J., 419, 777
Makowski, R. I., 167
Marchylo, B. A., 25, 427, 433, 1343
Marriage, P. B., 947
Matsuo, R. R., 25, 49, 427

Maun, M. A., 669, 763 Maw, M. G., 651 McBlain, B. A., 1315 McDiarmid, R. E., 1235 McGregor, D. I., 97, 1441 McKenzie, H., 87, 1309, 1333 McKenzie, J. S., 103, 703 McKenzie, R. C., 91 McLaughlin, N. B., 1477 McLaughlin, R. J., 547 McLean, A., 131 McLean, G. E., 103, 703 McNaughton, M. E., 585 McRae, K. B., 337 McVetty, P. B. E., 1135 McWilliams, E. L., 1215 Mehuys, G. R., 139 Miller, F. R., 473 Mills, J. T., 831 Miyanishi, K., 953 Morrison, I, N., 1115 Motto, M., 1101 Meuhmer, J. K., 911 Muldoon, J. F., 399 Muller, K., 865 Mullin, W. J., 605, 1295 Munro, D. C., 599

Nass, H. G., 1141 Neish, G. A., 727 Nelson, S. H., 879, 883, 1015

Olthof, Th. H. A., 281 Ormrod, D. P., 1023 O'Bannon, J. H., 859 O'Donovan, J. T., 773, 939 O'Leary, N. F., 773 O'Sullivan, J., 923 O'Sullivan, P. A., 307, 939, 1255

Paquin, R., 139, 525, 1077, 1351
Park, H. G., 1059
Parsons, D. C., 873
Peaden, R. N., 859
Pegiati, M. T., 221, 687
Pelletier, G. J., 723
Pelletier, H., 1351
Pelletier, H., 349
Pellett, N. E., 303
Pepin, H. S., 1203
Perenzin, M., 1101
Petrie, G. A., 267
Phatak, S. C., 167
Phillips, M. L., 1023
Pinchbeck, B. R., 509

Pittman, U. J., 87 Potter, J. W., 203, 293, 533 Prendeville, G. N., 613, 773 Prevost, D., 209 Pritchard, M. K., 5 Proctor, J. T. A., 1023 Proudfoot, K. G., 605 Rahe, J. E., 157 Rao, V. R., 411 Reinbergs, E., 741 Rice, W. A., 847 Richard, C., 265 Rioux, R., 591 Robbins, J. A., 255 Ronald, W., 1057 Ronald, W. G., 1055 Rossnagel, B. G., 241, 733 Rowland, G. G., 55 Roy, R. C., 679 Rutger, J. N., 1 Safo-Kantanka, O., 227 Schmid, J., 821 Seyedin, N., 1427 Shaykewich, C. F., 69 Sibuga, K. P., 1419 Simeoni, F., 687 Simmonds, J., 259, 561 Simpson, G. M., 13 Sinha, R. N., 1087 Smith, A. E., 185, 311 Smoliak, S., 1473 Sosulski, F. W., 1327 Spurr, D. T., 1467 Stephenson, G. R., 167, 1005 Stobbe, E. H., 5 Stout, D. G., 13 Stringam, G. R., 97, 331 St-Pierre, C. A., 31, 41, 61, 79, 233, 273, 723 St-Pierre, J. C., 525 Sullivan, J. A., 533 Sutton, J. C., 149, 453 Svejda, F., 1053, 1057

Takeda, K., 379
Tanner, J. W., 679
Tan, C. S., 197
Thiessen, E. P., 1005
Thomas, A. G., 651
Tipples, K. H., 357
Toomsan, L. R., 387
Townsend, L.R., 337
Townshend, J. L., 293
Trudel, J. S., 577
Tsay, J. S., 1059

Tsujita, M. J., 665 Tung, M. A., 555, 865 Turcotte, P., 79 Turkington, R., 965, 981 Tu, J. C., 585

Utkhede, R. S., 157 Valdebouze, P., 695 Van Ryswyk, A. L., 1235 Vanden Born, W. H., 307 Verma, P. R., 267, 1467

Vose, J. R., 1109

Warder, F. G., 1063, 1179 Warren, F. S., 1377 Warwick, S. I., 751, 947, 1485 Watson, A. K., 755, 993 Weaver, S. E., 1215, 1485 Webster, D. H., 1383 Werner, P. A., 621, 1391 White, R. S., 1411 Willemot, C., 349 Willms, W., 131 Winkleman, G. E., 1179 Wolfe, R. I., 1431, 1435 Woodbury, W., 795 Woods, D. L., 1031 Yarborough, D. E., 891

Zidan, M. A., 713

CANADIAN JOURNAL OF PLANT SCIENCE SUBJECT INDEX, VOLUME 60, 1980

Acaulospora trappei, influence on alfalfa growth, 859

Acroptilon repens, biology, 993

Agromyza frontella, effect on spring black stem of alfalfa, 265

Agropyron dasystachyum, cv. Elbee, 1473

Agropyron desertorum, chemical constituents over time, 131

seedling traits and winter hardiness, 1411

Agropyron intermedium, seedling traits and winter hardiness, 1411

Agropyron spicatum, chemical constituents over time, 131

Air pollution, in Ontario, 1023

Alachlor, persistence in soils, 311 tolerance in corn seedlings, 1045

Albugo candida, bud inoculation and systemic infection, 267

Alfalfa, cold hardening and dehardening, 1351 cold hardiness, 703

cold tolerance and soil moisture, 139

competition and selection for high yielding clones, 1157

factors contributing to winter injury, 103 inheritance of resistance to Meloidogyne

hapla, 533 spring black stem, alfalfa blotch leafminer,

variation in high temperature tolerance, 547

vesicular-arbuscular mycorrhiza, 859 Alfalfa-timothy, effect on molybdenum and lime, 113

Allium cepa (See Onion)

Amaranthus hybridus, biology, 1485

Amaranthus powellii, atrazine resistance, 1485 biology, 1215

Amaranthus retroflexus, atrazine resistance, 1485

biology, 1215

Amelanchier alnifolia (See Saskatoons),

Amylase (alpha) isozymes, variation within the wheat kernel, 433

Analysis (flow injection), development of a sample injector, 767

Apples, storage under low O₂ and CO₂, 299 trunk growth and crop load, 1383

Apple scab, electronic disease severity predictor, 213

Arachis hypogaea (See Peanut)

Arctium lappa, biology, 621

Arctium minus, biology, 621

Aronia melanocarpa (See Barrenberry)

Arrowgrass, seasonal variation in cyanide potential, 1235

Apsergillus flavus, mycotoxins in corn, 727

Asulam, persistence in soils, 311

Atrazine, cytoplasmic inheritance of resistance in Chenopodium album, 751

resistance in Amaranthus retroflexus and A. powellii, 1485

Avena fatua (See Oats (wild))

Avena sativa (See Oats)

Baking quality, effect of immaturity in wheat, 357

use of Glenlea in blended flours, 737

Barban, antidote for growth of oats, 1005 efficacy and time before immersion, 307

Barban-benzoylprop ethyl, efficacy and time before immersion, 307

Barban-difenzoquat, efficacy and time before immersion, 307

Barban-metribuzin mixtures, wild oat and tartary buckwheat control, 1255

Barley, airplane vs. ground seeding, 1147

border rows of winter wheat, 273 breeding, doubled haploids vs. pedigree, 79

coleptile length and culm length, 687 cultivar identification by hordein electrophoregrams, 1343

cultivar yield on fallow vs. stubble land, 371

cv. Bedford, 1435

cv. Johnston, 1431

cv. Massey, 277 cv. Mingo, 279

cv. OAC Halton (winter), 741

doubled haploids, 79

effect of nitrogen form on growth, yield and yield components, 1063

magnetic seed treatment, effect on crop growth rate and yield, 463

natural selection, qualitative traits, 31

quantitative traits, 41

nitrogen and seed set, 785

photoperiod response characteristics, 777

rate of leaf development, 1263

seed weight and coleoptile dimensions, 221 semidwarf vs. normal, root volume extraction

and soil moisture, 241 soil moisture stress, 733

Barrenberry, effect of endothall and glyphosate on fruit yield, 891

Bean anthracnose, benomyl resistant biotypes in the delta race, 585

Beans, amino acid composition, nitrogen-toprotein factors, 1327

effect of salnization on physiological activities, 713

leaf-cell membrane permeability to herbicides, 613

nitrogen fertilization and nitrogen fixation, 121

Beets (sugar), respiration rates and internal CO₂ concentration, 311

Benazolin, resistant biotypes of bean anthracnose, 585

soil drench for control of *Phomopsis* black rot of cucumbers, 747

Bensulide, preemergent control of annual bluegrass, 947

Bentgrass (creeping), thatch control, 1209

Benzoylprop ethyl, efficacy and time before immersion, 307

Bird repellent, methiocarb on sorghum, 1129

Blueberry, effect of endothall and glyphosate on fruit yield, 891

highbush, effect of surfactants on blossom cold hardiness and yield, 255

bluegrass (annual), effect of thatch removal on ingresss, 1209

preemergent and postemergent herbicides, 947 bluegrass (Kentucky), effect of hydrogel on germination, growth and sod establishment, 665

effect of organic and inorganic nitrogen on summer and fall color, 1015

Boron, effect of N, P and K on B in leaves of cauliflower, Brussel sprouts and peas, 571

Brassica campestris (See Rape (turnip))
Brassica hirta (See Mustard (yellow))

Brassica juncea, yield component correlations, 285

Brassica kaber (See Mustard (wild))
Brassica napobrassica (See Rutabaga)

Brassica napus (See Rape)

Brassica oleracea var. botrytis (See Cauliflower) Brassica oleracea var. gemmifera (See Brussels

Brassica oleracea var. capitata (See Cabbage) Brassica rapa (See Turnip)

Breeding, barley, doubled haploids vs. pedigree,

orchardgrass, performance of advanced generations, 479

orchardgrass, double cross hybrids vs. single cross mixtures, 485

Bromacil, leaf-cell permeability in beans, 613

Bromegrass, (smooth), seed yield and stubble removal date, 841

seedling pubescence as a marker, 1163

Bromus inermis (See Bromegrass (smooth))
Brussels sprouts, effect of N, P and K on boron in

leaf tissue, 571

Buckwheat, effect of boron and calcium on yield and seed weight, 721

Buckwheat (Tartary), control with metribuzin mixtures, 1255

Cabbage, effect of molybdenum and lime, 113 Carrots, growth patterns in baby cultivars, effect

of high rainfall, 911 Carthamus tinctorus (See Safflower)

Cauliflower, effect of N, P and K on boron in leaf tissue, 571

Centaurea (See Acroptilon)

Cereals, spectral characteristics in relation to maturity, 411

spectroscopy, 69

Chenopodium album, (See Lamb's-quarters)

Cherries (sweet), fruit surface pitting, maturity and fruit composition, 865 surface pitting in relation to storage tempera-

ture, 555 chickpea, amino acid composition, nitrogen-to-

protein factors, 1327 Chickweed, biology, 981

Chlorpropham, leaf-cell permeability in beans,

Chlorthal-dimethyl, preemergent control of annual bluegress, 947

Chromosome substitution lines, milling and baking quality in wheat, 1333

Cicer arietinum (See Chickpeas)

Clover (alsike), seasonal pattern of and total nitrogen fixation, 847

Clover (red), cv. Bytown (tetraploid), 1041 seasonal pattern of and total nitrogen fixation, 847

Clover (red)-timothy mixture, effect of molybdenum and lime, 113

Clover (Spanish), genetics of nitrogen fixation, 509

Clubroot, resistance and glucosinolate content in rutabaga and turnip, 605

Cochliobolus sativus, effect of imazalil on crown depth and tillering in wheat, 1467

Cold hardening of alfalfa, related to air and soil temperature, 1351

Cold hardiness, alfalfa, 703

denaturation of cell membranes in wheat, 1303

prevention of supercooling in Forsythia roots, 303

seedling traits of forage grasses, 1411 soil moisture effect in alfalfa, 139 soybeans, 821

Colletotrichum lindemuthianum (See Bean anthracnose)

Container-grown plants, temperature and overwintering outside, 895

Corn, bird injury and fungal colonization, 453 corn heat units, maturity for forage and grain production, 539

evapotranspiration, 445

forage mixtures with sunflowers, 1377

forage yield assessment by grain and stover yields, 539

genetics of alachlor resistance, 1045 global radiation and growth rate, 1451

grain filling period, effect on weight, variance and heritability, 1101

irrigation, effect on silage and grain yield, 445 morphological traits, resistance to *Gibberella zeae*, 1463

mycotixins, Fusarium and Aspergillus, 727 nitrification inhibitor, yield and levels of N in tissue, 337

nitrogen fertilization, effect on silage and grain yield, 445

protein content, effect of bird injury, 453 screening for *Gibberella zeae* resistance, 1123 simulated frost injury with paraquat, effect on

yield, 419 tassel auxin levels, tolerance to high population densities, 1427

weed density and yield, 1419

zearalenone mycotoxin, effect of weather, 149 Corn heat units, maturity for grain and forage production in corn, 539

Corn stover and kale silage, yield and disgestibility, 807

Corn (forage), maturity, planting date and harvest date, 1367

Corn-kale silage, yield and digestibility, 807 Cowpeas, effect of salinization on physiological activities, 713

Crop growth rate, effect of magnetic seed treatment in barley, 463

Crop identification, radar vs. thermal infrared imagery, 1077

Cucumbers, control of *Phomopsis* black rot with benomyl, 747

effect of spacing, irrigation and nitrogen on yield and quality, 923

Cultivar identification, hordein electrophore-

grams in barley, 1343

Cyanide potential, seasonal variation in arrowgrass, 1235

Cyperus esculentus, collection of tubers, 755

Cytoplasmic effects, atrazine resistance in Chenopodium album, 751 magnetotropism in wheat, 87

temperature stress in tomatoes, 163

Dactylis glomerata (see Orchardgrass)

Dalapon, leaf-cell permeability in beans, 613

Daucus carota (See Carrots)

Denitrification, reduced seed set of wheat, 785 Desmodium sandwicense (See Clover (Spanish))

Diclofop methyl, efficacy and time before immersion, 307

leaf-cell permeability in wild oats and barley, 773

Diclofop-metribuzin mixtures, wild oat and Tartary buckwheat control, 1255

Difenzoquat, efficacy and time before immersion, 307

Difenzoquat-metribuzin mixtures, wild oat and Tartary buckwheat control, 1255

Dinitramine, effect on staghead of turnip rape, 1039

persistence and phytotoxicity, 5

Dinitroanilines, persistence and phytotoxicity, 5 Diquat, effect on fababean desiccation on yield and quality, 1115

Dough mixing strength, mixograph vs. extensigraph, 1071

Drought resistance, germination of sorghum under osmotic stress, 13

semi-dwarf and normal barley, yield components and harvest index, 733

Durum, effect on triancontanol on germination and growth, 795

quality and gliadin electrophoregrams, 427 SDS-sedimentation as a measure of gluten strength, 25

semolina milling properties, test weight, seed weight, protein, 49

Electrophoresis, cultivar identification in barley, 1343

Elymus angustus (See Wild ryegrass (Altai))
Elymus junceus (See Wild ryegrass (Russian))
Endoshall effect on blueberry and barrenber

Endothall, effect on blueberry and barrenberry fruit yield, 891

postemergent control of annual bluegrass, 947 EPTC, antidotes for alfalfa establishment, 1049 *Euphorbia esula*, biology, 651

Evapotranspiration, corn, 445

Evapotranspiration, potential in corn, potatoes and tomatoes, 197

Fababeans, amino acid composition, nitrogento-protein factors, 1327

desiccation vs. swathing, effect on yield and quality, 1115

inheritance of tannin-free trait, 1135 irrigation, yield, protein and water use, 91 nitrogen fertilization and N fixation, 121 pleiotropic effects of tannin-free trait, 1135

Rhizobium strain selection, 385 trypsin inhibitors and hemagglutinins, 687

Fagopyrum esculentum (see Buckwheat)

Fatty acids, effect of yellow embryo mutant in turnip rape, 97

Flamprop isopropyl, efficacy and time before immersion, 307

Flamprop methyl, efficacy and time before immersion, 307

Flamprop-metribuzin mixtures, wild oat and Tartary buckwheat control, 1255

Flax, agronomic evaluation for fibre in Saskatchewan, 55

photoperiod response characteristics, 777 weather damage and seed quality, grading factors, 799

Flow injection analysis, sample injector developed, 767

Fluchloralin, persistence and phytotoxicity, 5 Fluoride, air pollution in Ontario, 1023

Forages (perennial), effect of seeding year on forage yield, 1191

Forsythia, cv. Northern Gold, 1057

Forsythia X intermedia, prevention of supercooling in roots, 303

Foxtail (green), control in wheat and barley by propanil, 177 density and corn yield, 1419

rate of leaf development, 1263

Frost hardening, relation to linolenic acid in wheat, 349

timothy cultivars, proline and dry matter, 525 Frost injury, simulated in corn by paraquat, effect on yield and kernel development, 419

Fusarium graminearum, mycotoxins in corn, 149, 453, 727

Fusarium moniliforme, mycotoxins in corn, 453

Germination, under osmotic stress in sorghum,

effect of light, gibberellic acid and NaOC1 in stinkweed and wild mustard, 643

Germination rate, effect of temperature, light and gibberellic acid in *Impatiens wallerana*, 259

Germination rate, establishment of seedlings of Impatiens wallerana, 561

Gibberella zeae, horizontal resistance in corn, 1459

resistance in corn related to pendant ears and loose husks, 1463

Gibberellic acid, effect on germination rate of Impatiens wallerana, 259

Gliadin electrophoregrams, relation to quality in durum, 427

Glomus epigaeus, G. fasciculatus, G. mosseae, alfalfa growth, 859

Glucosinolates, clubroot resistance in rutabaga and turnip, 605

composition and content during growth of rutabaga and turnip, 1295

Gluten strength, measured by SDSsedimentation in durum, 25

Glycine max (see Soybeans)

Glyphosate, antagonism with bromoxynil, MCPA, 2,4-D and dicamba, 939

effect on blueberry and barrenberry fruit yield, 891

leaf-cell permeability in beans, 613

Goitrin, rutabaga and turnip, 605

Grain filling period, corn, hybrid differences in corn heat units, 1367

yield of soybeans, 1315

Grain legumes, amino acid composition, nitrogen-to-protein factors, 1327 Grapes, nutrient content of petioles, 873

Grasses, chemical constituents over time, 131 Growth rate and harvest index, yield of oats, 379

Hail, damage and recovery in rape, 1441 Haploids (doubled), in barley, 79

Harvest index, population density, selection for yield in F₂ in wheat, 1141 yield in oats, 379

Helianthus anuus (See sunflowers)

Hemagglutinins, fababeans, peas, lupines, soybeans, Vigna sinensis, 687

Herbicides, barban antidotes in oats, 1005 EPTC in alfalfa, 1049

persistence in Saskatchewan soils, 311

Hordeum vulgare (See Barley) Hybrids, orchardgrass, double cross and single

cross mixtures, 485 single cross and advanced generations, 479

Hydrogel, germination, growth and establishment of Kentucky bluegrass, 665

Imazalil, effect on subcrown internode length and tillering in wheat, 1467

Impatiens wallerana, germination rate, temperature, light, GA, 259

seedling establishment, low temperature and polyethylene glycol, 561

Infrared photography, crop identification, 1077 Infrared reflectance spectra, discrimination of cereals, 69

related to maturity changes in cereals, 411

Kale-corn silage, yield and digestibility, 807 Koeleria cristata, chemical over time, 131

Lactuca sativa var. capitata (See Lettuce (head))
Lamb's-quarters, density and corn yield, 1419
cytoplasmic inheritance of atrazine resistance,
751

Larch (Siberian), sulfate and chloride salinity, growth and needle composition, 903

Lathyrus, aminos acid composition, nitrogento-protein factors, 1327

Leaf area, reciprocal cross analysis in tomatoes, 1289

Lentils, amino acid composition, nitrogen-toprotein factors, 1327

triallate tolerance and residues, 1283

Lettuce (head), photosynthetic and respiration rates, 577

Lime, effect on molybdenum availability, 113 Linolenic acid, relationship to frost hardening in wheat, 349

Linum usitatissimum (See Flax)

Linuron, leaf-cell permeability in beans, 613 postemergent control of annual bluegrass, 947

Lolium multiflorum (See Ryegrass (annual))
Lolium perenne (See Ryegrass (perennial))
Lotus corniculatus (See Trefoil (bird's-foot))

Lupine, amino acid composition, nitrogen-toprotein factors, 1327

Lycopersicum esculentum (See Tomatoes)

Magnetic seed treatment, effect on growth and yield of barley, 463

Magnetotropism, wheat, 87

Maize (See Corn)

Malus sylvestris (See Apples)

Marsh, vegetational analysis along Lake Huron, 669

Medicago (See Alfalfa)

Meloidogyne (See Nematodes)

Methiocarb, bird repellent on grain sorghum, 1129

Metribuzin, synergistic phytotoxicity in tomatoes, 167

mixtures for wild oat and Tartary buckwheat control, 1255

tolerance of tomato transplants, 759

Metribuzin-MCPA mixtures, wild oat and Tartary buckwheat control, 1255

Milling and baking quality, effect of immaturity of wheat, 357

reciprocal chromosome substitutions, 1333

Molybdenum, cabbage and grass-legume mixtures, 113

Mungbean, amino acid composition, nitrogento-protein factors, 1327

seed yield, specific leaf weight and RuDP-Case, 1059

Mustard, yield component correlations, 285

Mustard (wild), effect of GA, light and NaOCl on seed dormancy and germination, 643

Mustard (yellow), pod hairiness and flea beetle damage, 1439

variation in seed mucilage, 1031
Mycotoxins, Fusarium and Aspergillus in corn,
727

zearalenone in corn, effect of bird damage, 453 effect of weather, 149

Naphthalic anhydride, barban antidote for oats, 1005

Natural selection, barley, 31 wheat cultivar mixtures, 1309

Nematodes, inheritance of resistance in alfalfa, 533

population behaviour in forage legumes, 293 winter survival, 203

Net assimilation rates, reciprocal cross analysis in tomatoes, 1289

Net photosynthesis rates, reciprocal cross analysis in tomatoes, 1289

Niclofen, persistence in soils, 131 weed control in rutabagas, 917

Nitrapyrin, effect on yield and tissue nitrogen levels in corn, 337

Nitrification inhibitor, effect of nitrapyrin on yield of corn, 337

Nitrogen, effect on agronomic and quality traits of wheat, 1071

effect of N form on growth and yield of wheat and barley, 1063

fertilization and nitrogen fixation in grain legumes, 121

fixation in alsike and red clover, 847

genetics of fixation in Spanish clover, 509

relation of N fixation to nitrate reductase in Rhizobium meliloti, 209

Nursery plants in containers, overwintering in heated environments, 895

Oats, airplane vs. ground seeding, 1147 barban antidote, 1005

cultivar yield on stubble vs. fallow land, 371 cv. Cascade, 283

effect of seeding rate and soil temperature on weed competition and yield, 61

growth rate and harvest index, 379 photoperiod response characteristics, 777 rate of leaf development, 1263

Oats (wild), control with metribuzin mixtures, 1255

herbicide efficacy after immersion, 307 rate of leaf development, 1263

soil temperature effects on trifluralin phytotoxicity, 929

Onion, smut resistance, 157

Onobrychis viciaefolia (See Sainfoin)

Orchardgrass, advanced generation hybrids vs. single crosses, 479

double cross hybrids, vs. single cross mixtures, 485

seed yield and stubble removal date, 841 Ozone, air pollution in Ontario, 1023

Panicum dichotomiflorum var. geniculatum, germination and emergence of buried seed, 635

Paraquat, leaf-cell permeability in beans, 613 simulated frost injury in corn and effect on yield, 419

Peanuts, agronomic practices in Ontario, 679
Peas, amino acid composition, nitrogen-toprotein factors, 1327

cv. Lenca, 297

effect of nitrogen fertilization and N fixation on carbohydrate, protein and oligosaccharide accumulation, 1109

effect of N, P, K and lime on boron in leaves, 571

effect of N, P, K and lime on yield and maturity, 599

nitrogen fertilization and N fixation, 121 trypsin inhibitors and hemagglutinins, 687

Phaseolus vulgaris (See Beans)

Phaseolus lunatus, amino acid composition, nitrogen-to-protein factors, 1327

Phleum pratense (See Timothy)

Phoma medicaginis, blotch leafminer, 265

Phomopsis cucurbitae, control with soil drenches of benomyl, 747

Photography, isolation of layers in plant canopies, 771

Photoperiod (minimum, maximum, sensitivity) in crop plants, 777

Photosynthesis rates, expressed per unit area or per plant, 577

Phyllotreta cruciferae, effect of pod hairiness in Brassica hirta, 1439

Picloram, leaf-cell permeability in beans, 613 *Pisum sativum* (See Peas)

Plantago lanceolata, biology, 1269

Plasmodiophora (See Clubroot)
Poa annua (See Bluegrass (annual))

Poa pratensis (See Bluegrass (Kentucky))

Poa sandbergii, chemical constituents over time, 131

Poplar, cv. Tower, 1055

Portulacea oleracea, biology, 953

Potatoes, effect of ridged or flat seedbed on time of hilling and yield, 591

Pratylenchus peneirans, resistance in rye, 281
 Profluralin, persistence and phytotoxicity, 5
 persistence in soils, 331

Prometryne, leaf-cell permeability in beans, 613 Propanil, foxtail control and residues in wheat and barley, 177

Prunus sativum (See Cherries (sweet))

Pulse crops, amino acid composition, nitrogento-protein factors, 1327

Quality, loss in storage of high moisture rape, 831 weather damage in flax, 799

Rape, hail damage and recovery, 1441

quality losses in storage at high moisture, 831 Rape (turnip), hail damage and recovery, 1441

bud inoculation and seed infestation with Albugo, 267

inheritance of seed color, 331

photoperiod response characteristics, 777 staghead, fungicide and herbicide effects, 1039

yellow embryo mutant, inheritance and fatty acid composition, 97

yield component correlations, 285

Raspberry, effect of triadimefon on plant growth, 1203

Reciprocal crosses, physiological traits in tomatoes, 1289

Remote sensing of crops, color infrared photography, 1077

Respiration rates, expressed per unit area or per plant, 577

Rhizobium, granular inoculum, seed- and soilapplied in soybeans, 399

strain selection for fababeans, 385

Rhizobium meliloti, nitrate reductase in relation to N fixation, 209

Rose, cv. John Franklin, 1053

Rutabaga, glucosinolate and goitrin content, clubroot resistance, 605

seasonal variation in glucosinolate composition, 1295

weed competition and control, 917

Rye, photoperiod response characteristics, 777 resistance to root-lesion nematode, 281

Ryegrass (annual), effect of nitrogen rates and harvest schedules on yield and quality, 519

Ryegrass (perennial), selection for dry matter yield, correlated response, 501

direct response, 491 Ryegrass (Westerwolds) (See Ryegrass (annual))

Safflower, character associations, genetics and heritability, 813

Sainfoin, cv. Nova, 1481

Salinity, effect on growth and needle composition of Siberian larch, 903

Salt spray injury, *Thuja occidentalis*, effect of relative humidity, 763Salt tolerance, physiological activities of beans

Salt tolerance, physiological activities of beans and cowpeas, 713

Saskatoons, rooting and transplanting of softwood and hardwood cuttings, 883

rootstocks, Crataegus, Malus, Sorbus, Cotoneaster, 879

Secale cereale (See Rye)

Sedimentation (SDS), measure of gluten strength in durum, 25

Seed cleaner, specifications for forage, 1477

Seed dormancy, in wild mustard and stinkweed, effect of gibberellic acid, light and NaOCl, 643

Seedling establishment, *Impatiens wallerana*, effect of low temperature and polyethylene glycol, 561

Seedling vigor, dry weight and mortality in wheat, 1455

genetic variance in Russian wild ryegrass, 1171

Selection, for yield in perennial ryegrass, 491

Semolina milling properties, test weight, seed weight, protein, 49

Senescence in sorghum, inheritance of, 473

Setaria viridis (See Foxtail (green))

Significance (tests of), misuse of multiple comparison tests, 325

Silage, yield and digestibility of corn-kale mixtures, 807

Silene noctiflora, biology, 1243

Sinapis alba (See Mustard (yellow)) Sinapis arvensis (See Mustard (wild)) Sodium azide, leaf-cell permeability in beans, 613

Soil moisture, effect on cold tolerance in alfalfa, 139

Solanum tuberosum (See Potatoes)

Solidago canadensis, biology, 1393

Sorghum, drought resistance, germination under osmotic stress, 13

drought tolerance among cultivars, stability, 233

methiocarb bird repellent, 1129

photoperiod response characteristics, 77 senescent and non-senescent, inheritance of, 473

tiller growth, inheritance of, 473

Soybeans, amino acid composition, nitrogento-protein factors, 1327

cold tolerance, 821

nitrogen fertilization and N fixation, 121 photoperiod response characteristics, 777

physiology of high yield in early cultivars, 1315

quality under aerobic and anaerobic storage, 1087

row spacings and plant arrangement, 227 seed- and soil-applied *Rhizobium*, 399 storage conditions, fungi and insects, 1087 trypsin inhibitors and hemagglutinins, 687 yield and length of bean filling period, 1315

Spectroscopy, discrimination in cereals, 69 effects of changes in maturity in cereals, 411 Staghead, fungicide and herbicide effects, 1039 Statistical analysis, misuse of multiple compari-

son tests, 325

Stellaria media (See Chickweed)
Stinkweed, factors affecting seed dormancy and germination, 643

Stipa comata, chemical constituents over time,

Strawberry, cv. Tyee, 743

Sulfur dioxide, air pollution in Ontario, 1023

Sunflowers, cv. CMH 101 hybrid, 291

forage mixtures with corn, 1377 Supercooling, prevention of, in roots, 303

Temperature stress, high temperature tolerance in alfalfa, 547

reciprocal cross differences in tomatoes, 163 Thatch control, creeping bentgrass turf, 1209

Thiophanate methyl, control of *Phomopsis* black rot of cucumbers, 747

Thlaspi arvense (See Stinkweed)

Thuja occidentalis, foliar absorption of NaCl at two relative humidities, 763

Timothy, frost resistance, effect of cultivar, proline and dry matter, 525

seed yield and stubble removal date, 841

Tomatoes, reciprocal cross differences in leaf area, net assimilation and net photosynthesis, 1289

reciprocal cross differences in temperature stress, 163

synergistic phytotoxicity of metribuzin, 167 tolerance to metribuzin after transplanting, 759 Trefoil (bird's-foot), biology, 956

Triacontanol, effect on germination and growth in durum, 795

Triadimefon, effect on raspberry plant growth, 1203

Triallate, effect on staghead of turnip rape, 1039 residue studies and tolerance in lentils, 1283

Trifluralin, effect on staghead of turnip rape, 1039

persistence and phytotoxicity, 5 soil temperature and wild oat kill, 929 weed control in rutabaga, 917

Trifolium hybridum (See Clover (alsike))
Trifolium pratense (See Clover (red))

Triglochin maritima (See Arrowgrass)
Triticum aestivum (See Wheat)

Triticum destivum (See Wilea Triticum durum (See Durum)

Trypsin inhibitors, fababeans, peas, lupines, soybeans, Vigna sinensis, V. catjang, 687

Turnip, glucosinolate content, goitrin content and clubroot, 605

seasonal variation in glucosinolate composition, 1295

2,4-D, leaf-cell permeability in wild oats and barley, 773

leaf-cell permeability in beans, 613

Urocystis magica, resistance in onion, 157

Vaccinium (See Blueberry)

Vegetational analysis, Lake Huron marshes, 669 Venturia inequalis, electronic disease severity predictor, 213

Vicia faba (See Fababean)

Vigna catjang, trypsin inhibitors and hemagglutinins, 687

Vigna radiata (See Mungbean)

Vigna sinensis, trypsin inhibitors and hemagglutinins, 687

Vigna unguiculata (See Cowpeas)

Water uptake, wheat seeds on agar medium, 1035 Weather damage, effect on quality of flax, 799 Weed biology, *Acroptilon repens*, 993

Amaranthus hybridus, A. powelli, A. retroflexus, 1215

Arctium lappa, A. minus, 621

Centaurea repens, 993

Euphorbia esula, 651

Lotus corniculatus, 965

Plantago lanceolata, 1269

Portulaca oleracea, 953 Silene noctiflora, 1243

Solidago canadensis, 1393

Stellaria media, 981

Weed control, irrigation ditchbanks, chemicals vs. grasses, 185

Weeds, competitive ability in corn, 1419

Wheat, airplane vs. ground seeding, 1147

alpha-amylase isozymes during kernel development, 433

baking potential of Glenlea, 737

cold hardiness, denaturation of cell membranes, 1303

cultivar survival in mixtures, relation to agronomic traits, 1309

cv. Laval-19, 723

harvest index and selection for yield in F_2 , 1141

imazalil treatment, effect on crown depth and tillering, 1467

immaturity and milling and baking quality, 357 linolenic acid and frost hardening, 349

magnetotropism, 87

milling and baking quality, reciprocal chromosome substitution, 1333

nitrogen and seed set, 785

nitrogen fertilization, agronomic and quality traits, 1071

nitrogen form, growth, yield and yield components, 1063

photoperiod response characteristics, 777

rate of leaf development, 1263

seedling vigor, germination and ATP content, 1455

water uptake from agar media, 1035

Wheat (winter), border rows for barley plots, 273 Wild rice, variation in heading date, height, tillers, seed size, 1

Wild ryegrass (Altai), forage yield, effect of row spacing, 249

nitrogen and irrigation, forage and seed yield,

Wild ryegrass (Russian), screening for improved stand, 1171

seedling traits and winter hardiness, 1411 Winter injury, alfalfa, 103

Zea mays (See Corn)

Zearalenone, mycotoxin in corn, effect of bird damage, 453

effect of weather, 149

Zizania aquatica (See Wild rice)

